



1. Calculate writing the corresponding algorithm¹⁰ you use to get the result:

a) $87'25 - 23'508 =$ $63'742$	b) $0'075 \cdot 0'23 =$ $0'01725$	c) $2573'4 : 71'23 =$ (two decimal places) $36'13$
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2. Calculate the decimal value for the following fractions and classify them according to the result. Include the operation to get the decimal expression for each.

a) $\frac{57}{20} = 2'85$ Decimal finito Finite decimal	b) $\frac{8}{11} = 0'7\overline{2}$ Recurring decimal	c) $\frac{56}{7} = 8$ Integer
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3. Convert the following decimal numbers into a fraction in simplest form; that is, you have to reduce the fraction as much as possible.

a) $-2'5$; b) $20'4$; c) $-0'06$

$$\begin{array}{l} \text{a) } -2'5 = \frac{-25}{10} = \boxed{\frac{-5}{2}} \\ \text{b) } 20'4 = \frac{204}{10} = \boxed{\frac{102}{5}} \end{array} \quad \left| \quad \begin{array}{l} \text{c) } -0'06 = \frac{-6}{100} = \boxed{\frac{-3}{50}} \end{array}$$

4. Work out: a) $0,0234 : 1000$; b) $0,00786 \cdot 1000$; c) $453,21 : 0'001$; d) $23,5 \cdot 0'001$

$$\begin{array}{l} \text{a) } 0'0234 : 1000 = \boxed{0'0000234} \\ \text{b) } 0'00786 \cdot 1000 = \boxed{7'86} \end{array} \quad \left| \quad \begin{array}{l} \text{c) } 453'21 : 0'001 = \boxed{453210} \\ \text{d) } 23'5 \cdot 0'001 = \boxed{0'0235} \end{array}$$

¹⁰ Método, cuenta que usas.

5. A trader buys 1235 kilos of oranges at 0'43 € per kilo. He got a profit of 123'56 € in total by selling all the merchandise¹¹. At what price did he sell each kilo? Get your result to two decimal places.

$$\begin{array}{r} 1235 \cdot 0'43 = 531'05 \text{ € expenses} \\ 123'56 \text{ € profit} \\ \hline 654'61 \text{ sales} \end{array}$$

$$654'61 : 1235 = 0'53 \text{ €/kg}$$

6. a) What do you do to round a number to a given order?

Increase this digit by 1 if the next digit is 5 or greater
Leave the same if the next digit is less than 5

- b) How do you get the decimal form for a fraction?

You get it by dividing the numerator into the denominator

- c) Explain the scientific notation.

It is a way to write very big or small numbers. It has two parts: the significant figures with one integer digit only and the power of ten.

- c) What is the relation between the surface area and the side on a square?

$$\text{Area} = \text{side}^2 \text{ or } \text{side} = \sqrt{\text{Area}}$$

¹¹ Mercancía.

7. Calculate the following powers:

a) $0,4^3$; b) $\left(\frac{-3}{5}\right)^2$; c) $(2)^{-5}$; d) $\left(\frac{-1}{2}\right)^0$

a) $0,4^3 = 0,064$

b) $\left(\frac{-3}{5}\right)^2 = \left(\frac{-3}{5}\right)\left(\frac{-3}{5}\right) = \frac{9}{25}$

c) $(2)^{-5} = \frac{1}{2^5} = \frac{1}{32}$

d) $\left(\frac{-1}{2}\right)^0 = 1$

8. Simplify the following expressions using the properties of powers:

a) $\frac{2^3}{2^7}$; b) $x^{-5} \cdot x^3 \cdot x$; c) $(x^5)^{-3}$; d) $\frac{2^3 \cdot 2^{-4} \cdot 2}{2^5}$; e) $(3x)^4$

a) $\frac{2^3}{2^7} = 2^{3-7} = 2^{-4}$; b) $x^{-5} \cdot x^3 \cdot x = x^{-5+3+1} = x^{-1}$

c) $(x^5)^{-3} = x^{5 \cdot (-3)} = x^{-15}$; d) $\frac{2^3 \cdot 2^{-4} \cdot 2}{2^5} = \frac{2^{3-4+1}}{2^5} = \frac{2^0}{2^5} = 2^{-5}$

e) $(3x)^4 = 3^4 \cdot x^4 = 81 \cdot x^4$

9. How many seconds has a Century (100 years). Give your result as a power of ten.

$100 \cdot 365 \cdot 24 \cdot 60 \cdot 60 = 3153600000, = 3,1536 \cdot 10^9$

10. Calculate the following step by step: $3 - 5 \cdot \sqrt{16} + [18'6 + 3 \cdot (-2)^3] : 3 =$

$$3 - 5 \cdot 4 + [18'6 + 3 \cdot (-8)] : 3 =$$

$$= 3 - 20 + (18'6 - 24) : 3 =$$

$$= 3 - 20 + (-5'4) : 3 =$$

$$= 3 - 20 - 1'8 = -18'8$$

11. What is the BMI of a seventeen girl who weighs 54 Kg and is 1'7 m high? Mark the corresponding point on the chart.

$$\text{BMI} = \frac{54}{1'7^2} =$$

$$= \frac{54}{2'89} = 18'7$$

